

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

C. F. Gauss

In August of last year the editor of NATURE forwarded to me a letter he had received from Mr. Robert Gauss, of the firm of McDearman and Gauss, attorneys at law, St. Charles, Missouri, U.S.A. The object of this letter was to obtain, if possible, a copy of the *Proceedings* of the Royal Society (vol. vii.), referred to in my centenary notice of Gauss (NATURE, vol. xv. p. 533). I have not succeeded in obtaining this volume, and I learn from Mr. Walter White that there is no copy available from the Royal Society. In the course of a subsequent correspondence I have learnt several family particulars which, as I have Mr. Gauss's permission, I should like to give to supplement my former notice referred to above. I am the more disposed to do so as the notice of Gauss in the *Encycl. Brit.* (vol. x.) gives but scanty details, and, I observe, gives the erroneous date of April 23 (for April 30) as his birthday (vol. xv. p. 533), and further, all reference to Gauss's married life was omitted in my notice. Gauss, it is well known, was twice married. By his first wife he had two sons, Joseph and Louis, and one daughter, Minna; Joseph died in Europe four or five years ago, Louis died in infancy, and Minna, wife of Prof. Ewald, of Göttingen, died about ten years before her father. The second wife was Minna Waldeck (there is a letter from her mother to Olbers, in Dr. Bruhm's "Briefe zwischen A. v. Humboldt und Gauss," No. vi.); by her Gauss had also two sons and a daughter. This daughter, Theresa, died in Europe. The second son, William, settled in Missouri, and died August 23, 1879, at St. Louis. My informant says he died rich, and his sons are very well circumstanced in business: one son is a Presbyterian minister. Eugene Gauss, the eldest son by the second marriage, is the only living child of C. F. Gauss, and is in his sixty-seventh year (almost entirely blind with cataract in his eyes); he is Mr. R. Gauss's father; he left Europe about 1831, and has not since left his adopted country. The family propose to publish a translation of the several memoirs of Gauss in book form, and are very desirous of procuring copies of his letters to scientific men, more especially such as would be illustrative of his character and thoughts on general subjects. I have an extract before me of a letter from the daughter Theresa (date December 6, 1850), in which she says: "I cannot tell you much out of our quiet, simple life; one day and one year resembles very much the other, although they are peaceful days and years, for father, even now in his advanced years, retains his health unimpaired, and an always cheerful and happy frame of mind;" and then follows an account of the celebration in July, 1849, of his "semi-centennial doctors'-jubilee." Brunswick and Göttingen heaped honours upon him, and the King sent him autograph congratulations and bestowed on him the degree of a higher order; of letters and addresses there was no end" . . . "then father delivered an address in the University hall, which was filled to overflowing with spectators and auditors, and which was so decorated with flowers as to look like a fairy palace. Even the houses in the streets through which he passed were decorated, and the city swarmed with well-dressed people as on a holiday. When at last, at seven o'clock, he returned home from the dinner, he was indeed very much exhausted, and it was well that the torch-light procession, which the students had thought of getting up in his honour, was, at his wish, omitted." It was a matter of regret to the old man that not one of his sons was able to be present.

A subsequent letter (November 16, 1855) describes the closing scene: "Gradually his life ebbed away, while his sufferings ('from an organic heart trouble') increased. He bore it all though with constant cheerfulness, and with a uniform patience and submission. He did not altogether lose hope, and he retained his consciousness until the last. His physician Bauer remained with him during the day previous to, and during the night of, his death. At 1 o'clock in the morning he took hold of his pulse, and said: 'It is moving quietly and full as in his best days, death may linger a long time yet.' Ten minutes later

all was over! He died sitting up in his chair; and it was thus that his son Joseph found him enjoying, apparently, a quiet peaceful sleep." It is granted to few mathematicians to be so honoured in life.

R. TUCKER

Trans-Atlantic Longitudes

IN an admirable article by M. Perier on telegraphic differences of longitude, published in the *Bulletin de la Société de Géographie* for September, 1879, he refers to the cables across the Atlantic, and their use for the above-mentioned purpose.

As a matter of historical interest, I beg to forward you the following memoranda of the work of this class executed by this country.

By officers of this Survey:—

In 1866: Between Cambridge, Mass., and Greenwich, *via* Newfoundland and Ireland.

In 1870: Between Cambridge, Mass., and Brest, France.

In 1872: Between Cambridge, Mass., and Greenwich, *via* St. Pierre, Brest, and Paris.

The results of these observations are shown in our paper, written by Prof. J. E. Hilgard, on these longitudes, a copy of which is forwarded herewith.

By officers of the U.S. Navy:—

In 1874 and 1875: Key West to Havana, Havana to Santiago de Cuba, Santiago to Kingston, Jamaica, and Kingston to Panama.

In 1875 and 1876: Kingston to St. Thomas, to Port Spain, to Barbadoes.

In 1878 and 1879: Greenwich to Lisbon, to Funchal, to Porto Grande, to Pernambuco, to Bahia, to Rio de Janeiro, to Monte Video, to Buenos Ayres.

The cable between Para and Port Spain having been broken, the complete grand circuit cannot at present be effected.

C. P. PATTERSON

U.S. Coast and Geodetic Survey Office, Washington,
March 1

The "Zoological Record"

IN acknowledging with thanks the kindly notice of the last volume of this publication given in NATURE, vol. xxi. p. 392, I trust I am not out of order in referring to one or two sentences in it that require explanation. If the reviewer knew the difficulty of getting competent recorders at the slight remuneration we can offer, he would also appreciate the impossibility of enforcing uniformity in treatment of the separate subjects: the work is almost done as a favour, and each writer has his own idea as to the method most likely to be useful, and would probably desire all the others to conform to his standard.

The scheme of separate pagination referred to as a convenience to the printer is, on the contrary, a source of considerable additional trouble mechanically both to the printers and myself: it was adopted in deference to the expressed wishes of some working zoologists, who naturally desired to have as soon as possible the portions of the work devoted to their special branches, and who indeed very probably care for no other part of the publication. The query affecting myself as editor as to the accent always given on the *a* of *infra*, scarcely needs the answer that *infra* without the accent is a preposition requiring the accusative, and with the accent, as used here, is an adverb (see any large Latin dictionary, such as the old Ainsworth). It is also perhaps unnecessary to refer to the remark as to reproduction of the Greek "κ" by the English *c*, beyond observing that generic words, such as *Kallisporgia*, Wright, are supposed to be in Latin, not English; discretion is scarcely allowable when uniformity is desirable.

The identification of the author, H. W. Mackintosh, has evidently escaped Dr. Lütken, who has been puzzled by the form "Mr. Mackintosh" used in *Quart. Jour. Micr. Sci.*, xvii. p. 104.

In "Cœl. 13," *Cylicozoa* is not a misprint for *Calycozoa*, as is readily seen by referring to Taschenberg's paper itself.

Mr. Ross's paper on the muscles of a specimen of the Cheetah which he dissected, was possibly considered by the recorder as purely medical, with no attempt at deduction (the number of *Proceedings* of the Royal Irish Academy containing it did not arrive to my hands in London until October, 1878, long after the mammalian part was written).

The omission of a second reference to *Ceratella labyrinthica*

shall be supplied in the next volume; those who take the trouble to note such *omissa* are the truest friends we have.

E. C. RYE

[The writer of the review claims to know something of the difficulties the editor of the *Zoological Record* refers to, with which "haut ignorans mali" he sympathises, and still he clings to the idea that it might be expedient for the editor to keep his young team in hand, but in thus suggesting a uniformity in practice, nothing was further from his thoughts than an unfriendly criticism. As to the accentuation of the à in *infra*, he quite agrees with the editor that he would find the fact he mentions in an "old Ainsworth," but no modern writer now ever thinks of using an accent on Latin words under any circumstances, and hence the query. As to *Kalispongia*, Wright, being spelt with a *K* and not a *C*, though the subject is a tempting one for comment, yet a controversy on it would hardly be suited for the columns of NATURE, but surely the editor will draw a distinction between an attempt to preserve a uniformity in the style of the several records, and an insistence on authors being uniform in their spelling of generic names.]

A Museum Conference

MR. PATON'S suggestion about a museum conference is an admirable one, although I think that it should not be confined to officials only. The time has come when an Association for the Promotion and Systematic Arrangement of Museums must be formed. I trust, therefore, that those competent to do it will take the matter up and produce some practical result.

J. ROMILLY ALLEN

The Tay Bridge Storm

IN his interesting letter on the above subject (NATURE, vol. xxi. p. 443) Sir Ralph Abercromby remarks that "there is a good deal of evidence to show that where the velocity of the [cyclone] centre is very great, the strength of the wind for any given gradients is increased, or at all events becomes more squally and gusty;" and again (p. 444) that the Tay Bridge storm "was exceptionally squally and gusty, doubtless owing to the unusually rapid rate of its motion." I am far from wishing to be understood to impugn the accuracy of these remarks, but I would say that the law which is indicated in them has, if I mistake not, escaped general observation, and I believe that meteorologists will be grateful to Sir R. Abercromby, than whom no one can be found better able to do so, if he will point out the evidence on which it rests.

It is, I think, generally admitted that in traversing the continents both of Europe and of North America storms have on some occasions a greater velocity of propagation than has been recorded in the British Isles; and it seems possible that an increment in the quality of "gustiness" may be produced in an air current by its passage over a very extensive surface whose friction coefficient is large. But this scarcely seems to throw light upon the relation, mentioned by Sir R. Abercromby, between the gustiness of the wind for a given gradient over a particular and very limited area, and the velocity of propagation of the wind-system across that area.

The relation between the strength of the wind and the steepness of barometrical gradient is somewhat complex, and has not even yet received complete study. The relation between the strength of the wind and the velocity of propagation, or rate of progress of a storm, is a more intricate and obscure subject, and I believe that any facts which tend to elucidate it will be of considerable value, especially if this second relation can be shown to be independent of the first.

W. CLEMENT LEY

March 12

Strange Arithmetic

IN the March number of the *Contemporary Review* is an article by Dr. C. B. Radcliffe, entitled "A Sequel to the Pedigree of Man," in which some most startling theories are propounded. As an appendix to this article, he gives several tables intended to prove that the mean time of high spring-tide throughout the world is about six o'clock (morning and evening). For this purpose he gives the time at a considerable number of stations, and the very large discrepancies led me to inquire how he arrived at his results. This he does by adding the times together, and dividing by the number of places! It is surely

clear that any miscellaneous selection of times treated in this manner *must* give a result somewhere near six.

His first table shows a result of 6h. 9m., but if you take his figures, and number the hours from morning to evening, instead of noon to midnight (that is, call six twelve, and twelve six), the result is 6h. 27m., or on our hypothesis 27 minutes past noon! The proper way of treating the figures would be to show at how many places the tide is high during each hour, and the annexed table shows that it is utterly impossible to fix any mean time. If all Dr. Radcliffe's theories rest on such hollow proofs as this, they are certainly worthy of little attention.

Hour.	Table I.	Table II.
1 ¹	...	3
2	...	3
3	...	4
4	...	9
5	...	1
6	...	4
7	...	7
8	...	5
9	...	0
10	...	2
11	...	2
12	...	2
No. of places		32

Chester, March 6

E. S.

Fertilisation of the Grape Vine

THE season is favourable for an examination of the floral development of the vine, and I recommend an inspection of the flower of that plant to all who are curious. For my own part I shall be glad if any one who has remarked more than is obvious will tell us something about it, for the flower is certainly remarkable. On examination it is seen that each little knob, which at first sight seems to be the young grape, is, in fact, a little green cap, which, when lifted off, discloses a group of stamens closely surrounding the pistil. To all appearance this cap—which is all that represents the flower (in the common acceptation of the word)—must effectually prevent anything like cross-fertilisation. Apparently it becomes detached below and is thrown off as soon as the stamens, which continue to support it, lose their vitality, and not before. It is, indeed, not easy to conceive any other so simple an arrangement, by which, whatever of fertilisation is necessary, can be ensured being done at home. It seems as if by this arrangement every flower *must* fertilise, though there were not another within miles, and *cannot* be fertilised by any other but itself, though it be one among thousands.

Collingwood, March 14

J. HERSCHEL

EXPLORATION IN BORNEO

HERR CARL BOCK has successfully accomplished his journey across Borneo—from Koetei to Bandjermassing—arriving at the latter place on the last day of 1879. The journey was commenced on November 21, from Tangeroeng, the residence of the Sultan of Koetei, who promised to accompany Herr Bock, but did all in his power to dissuade him from going. From hence the route was up the Mahakkan River, to the village of Moara-Kaman, where the mosquitoes were so troublesome that a retreat was almost determined on. On the 24th the largest Malay village in the interior was reached—Kotta Bangoen, containing more than a thousand inhabitants. The whole of the lower part of the Mahakkan is occupied by the Malays, the Dyaks dwelling only on the smaller tributaries, or towards the source of the main river. In this neighbourhood there is abundance of rattang gutta, or edible birds' nests, and bees' wax, to obtain which the Malays go in parties of twenty or thirty into the forests for fear of the Dyaks. Owing to the great drought of last year in this district, the whole forest is leafless, a very unaccustomed sight in the tropics, and as a result the birds had all deserted it, or at least none were to be seen. At this village, as well as at

¹ That is, 1.0 to 1.59 (morning or evening).